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Text of Email from Eric Williams to Energy Supply TWG
Re: Update GHG Emissions Forecast Reflecting Peak Demand
September 21, 2005

From: eric@ewilliamsconsulting.com
Date: September 21, 2005 12:00:42 PM EDT
To: eric@ewilliamsconsulting.com
Subject: Updated GHG emissions forecast reflecting peak demand
Reply-To: eric@ewilliamsconsulting.com

I finished updating the GHG emissions forecast to reflect growth in peak demand, which in turn leads to growth in peaking units and emissions. Two utilities supplied peak demand growth projections. A weighted average growth resulted in a very similar growth in peak demand as forecasted by the WECC for Arizona and New Mexico combined. So I used that forecast since it covered all of Arizona and was consistent with the utility forecasts.

Comparing growth in total generation and peak demand, I was able to estimate what the ratio of new natural gas combined cycles to new natural gas combustion turbines is likely to be. For 2003 – 2010, it is 91/9 and for 2010 – 2025 it is 47/53. Keep in mind that until 2010, we assume that natural gas combined cycles are the dominant new baseload technology and that after 2010, coal dominates. So the amount of new natural gas combined cycle capacity coming in after 2010 is much smaller, so the ratio of combustion turbines is much higher. I adjusted heat rates accordingly in our forecasting spreadsheet to update the emissions forecast.

The end result in terms of emissions is as follows:

Increase in GHG Emissions from Accounting for Peak Demand Growth, Relative to Original Forecast																	
	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
MMtCO2	0.04	0.07	0.08	0.13	0.17	0.21	0.25	0.29	0.32	0.36	0.39	0.43	0.47	0.51	0.56	0.61	0.77

We will discuss this briefly in tomorrow's call.